

● PRINTER RUSH ●

(PTO ASSISTANCE)

Application : 09/684,184

Examiner : Lee

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DOC CODE	DOC DATE	MISCELLANEOUS
<input type="checkbox"/> 1449	_____	<input type="checkbox"/> Continuing Data
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<input type="checkbox"/> DRW	_____	
<input type="checkbox"/> OATH	_____	
<input type="checkbox"/> 312	_____	
<input checked="" type="checkbox"/> SPEC	<u>10/6/2000</u>	

[RUSH] MESSAGE: Specification, page 9 - line # 25 and 29
Application Serial No. 09/1248,587 and 09/1607,122, please
provide now U.S. Patent No. _____.

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Thank you.

[XRUSH] RESPONSE: Patent numbers added to spec. You
should have looked these up in PALM yourself.

INITIALS: DP

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REV 10/04

perform the specified functions or steps, or by combinations of special purpose hardware and computer instructions.

Referring now to FIG. 2, preferred manufacturing methods and systems for rapid production of hearing-aid shells may initially perform conventional operations 100 to (i) three-dimensionally scan an ear canal of a subject or a positive or negative mold of the ear canal of the subject, and (ii) generate scan data that digitally describes a shape of at least a portion of the shape of the ear canal. This scan data may take the form of a point cloud data file. The data files may be provided in an ASCII xyz data format by conventional digitizers, including those manufactured by Cyberware™, Digibotics™, Laser Design™, Steinbichler™, Hymarc™ and Minolta™, for example.

As illustrated by Block 200, preferred operations are then performed to generate a three-dimensional digital model of a hearing-aid shell with vent, from the scan data. A cross-sectional view of an exemplary hearing-aid shell is illustrated by FIG. 5. These operations may include initial operations to convert the point cloud data into a volume triangulation (e.g., tetrahedrized model) and then into a digital polygonal surface model, preferably a surface triangulation that models a shape of at least a portion of the ear canal of the subject. This may be done by removing all tetrahedra and retaining only the boundary of the volume model. Preferred examples of one or more aspects of these conversion operations are more fully described in commonly assigned U.S. Application Serial No.

09/248,587, filed February 11, 1999, entitled "Method of Automatic Shape Reconstruction", now U.S. Patent No. 6,377,865, and in U.S. Application Serial No. 09/607,122, filed June 29, 2000, entitled "Methods, Apparatus and Computer Program Products for Automatically Generating Nurbs Models of Triangulated Surfaces Using Homeomorphisms", now U.S. Patent No. 6,996,505, the disclosures of which are hereby incorporated herein by reference. These conversion operations may also include techniques to generate a Delaunay complex of point cloud data points.

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